

1/15/85

MEMORANDUM

SUBJECT: Classification of Heating/Air Conditioning Return Flow Systems - UIC Well Classification Advisory #6

FROM: Thomas E. Belk, Chief
Underground Injection Control Branch (WH-550)

TO: Donald J. Guinyard, Chief
Water Supply Branch, Region IV

We are responding to your letter of December 11, 1984, requesting a clarification of the classification of the type of heat exchange system represented on Figure 1.12 entitled "Series Vertical Earth Coil" (copy attached).

From the diagram you provided, I presume that no water would be removed from the aquifer and returned to it. Also, I presume that some fluid other than water would be used within the system to avoid freezing, corrosion, etc. It would seem that such a theoretical system, if properly constructed and maintained would not meet the definition of a Class V well. However, two points are clear. First, such a system, if leaking, could be a threat to underground sources of drinking water. Second, the burden is upon the owner/operator to demonstrate that his system is not a Class V well. Therefore, the director certainly has the option to require the owners/operators of all such systems to submit inventory information, and proof of the proper construction of the well.

Attachment

GRAHAM:hjh:1/9/85:000 FY 85#1doc. #8

				CONCURRENCES				
IBOL								
SURNAME								
DATE								

EPA Form 1320-1 (12-70)

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: DEC 11 1984

TO: Air Conditioning Return Flow
Wells

FROM: Chief, Water Supply Branch
Region IV

TO: Thomas E. Belk, Chief
Groundwater Protection Branch, ODW WH-550

We are frequently asked if heating/air conditioning return flow systems are included as Class V wells under the federal UIC program. Although it is clear certain of these systems do utilize Class V wells it is not clear all designs may be included. The design in question is one which encompasses an earth coil (U-Bend) type construction. This is a continuous coil which does not release fluid into a subsurface formation, when properly maintained.

Attached are diagrams of three types of heat exchange systems. The type represented on "figure 1.12" entitled "Series Vertical Earth Coil" is the one in question. I would appreciate your interpretation of this systems' status under the UIC program. Does a properly constructed and maintained system qualify as a Class V well.

Please respond as soon as possible. My staff and I are available for discussion if necessary.



Donald J. Guinyard

Attachment

cc: Paul Baltay (WH-550)

Figure-1.5 Single Well Open System

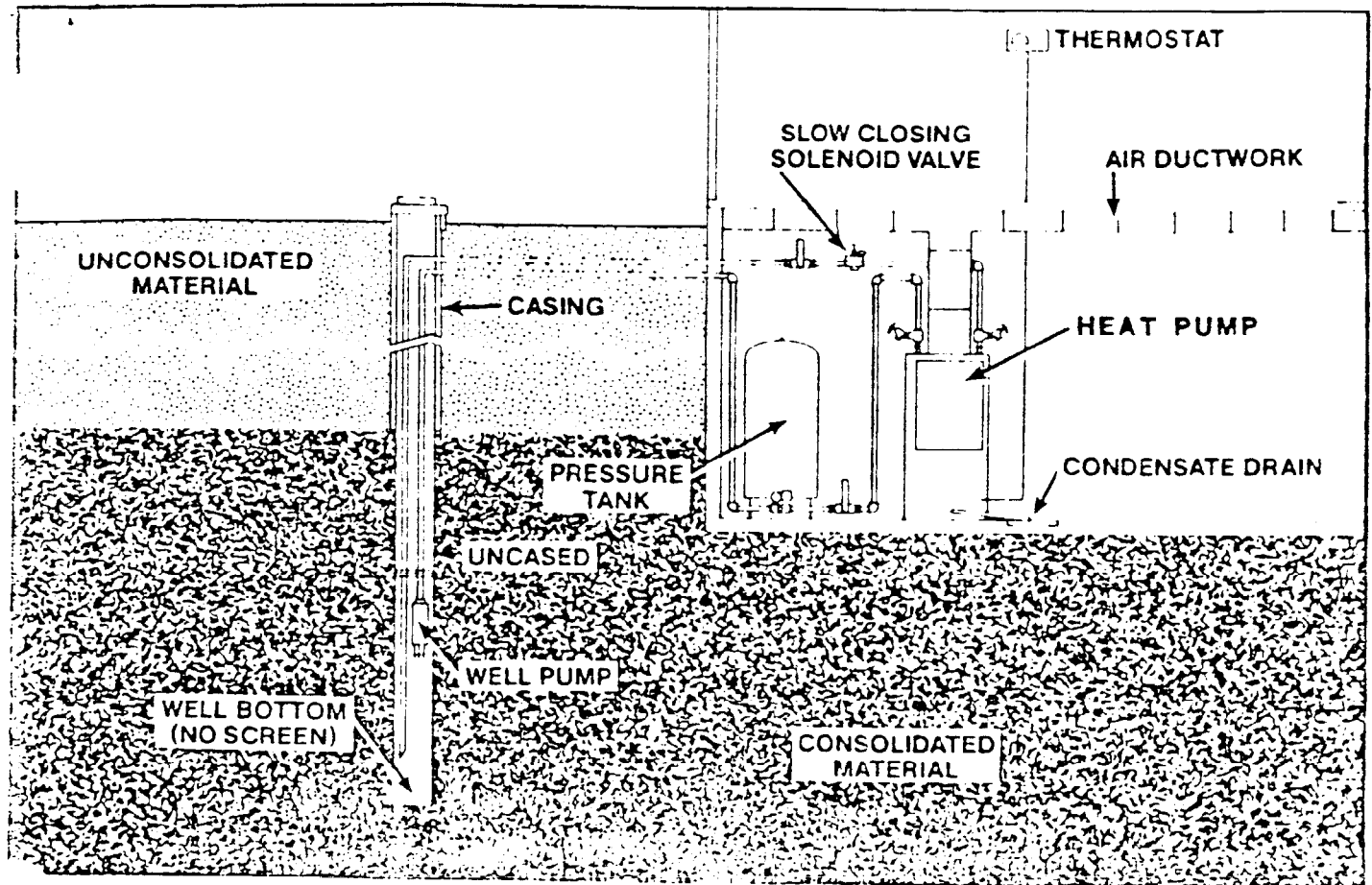
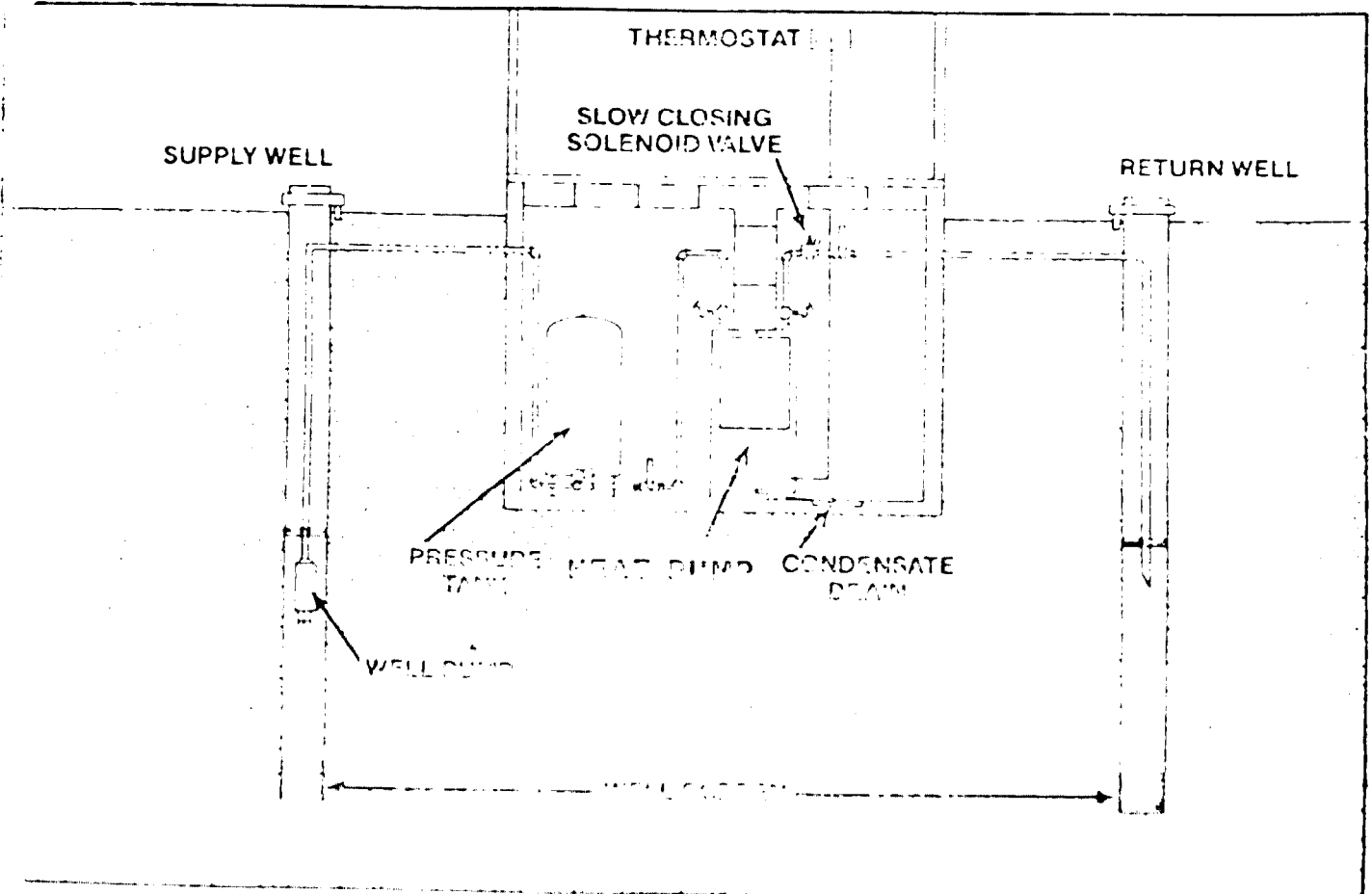
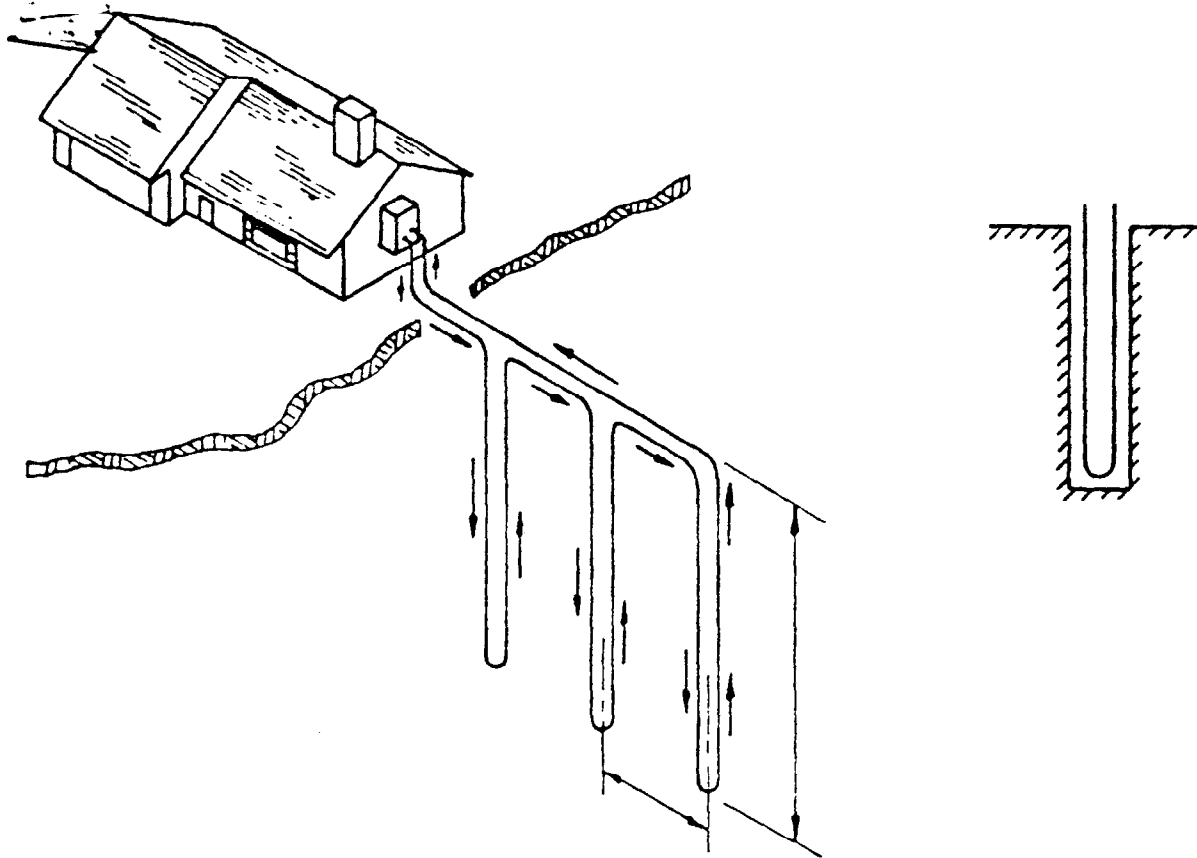


Figure 1.6 Dual Well Open System





EARTH COIL TYPE: VERTICAL-HAIRPIN (U-BEND)
FLOW PATH: SERIES
PIPE SIZES: 3/4, 1, 1 1/4, & 2 INCH
BORE LENGTH: 100 TO 175 FEET/TON
PIPE LENGTH: 200 TO 350 FEET/TON

SERIES VERTICAL EARTH COIL

Figure 1.12